

### **Abstract**

**A novel organic ultrathin membrane characterized in that an amphiphilic compound having a pigment group and a nucleic acid base is aligned due to base-pairing with an oligonucleotide which is capable of forming a base pair with the nucleic acid base to thereby constitute a monolayer is provided. In this organic ultrathin membrane, free space is provided around a pigment molecule so as to enable photoisomerization of the pigment molecule in a high-density solid state. Thus, it is useful as an optical memory, etc. Further, a process for producing the organic ultrathin membrane is provided.**